

Amendments to the Claims

1. (Withdrawn) A fuel cell electrode comprising:
a support structure comprising bacterial cellulose; and
a catalyst disposed in or on the support structure, the catalyst being selected from transition metals.
2. (Withdrawn) The fuel cell electrode of claim 1 wherein:
the catalyst is selected from platinum group metals.
3. (Withdrawn) The fuel cell electrode of claim 1 wherein:
the catalyst is palladium.
4. (Withdrawn) The fuel cell electrode of claim 1 further comprising:
an electrically conductive current carrier that contacts the support structure.
5. (Withdrawn) The fuel cell electrode of claim 1 wherein:
the support structure consists essentially of bacterial cellulose.
6. (Withdrawn) The fuel cell electrode of claim 1 further comprising:
an enzyme disposed in or on the support structure.
7. (Withdrawn) A method for recovering the catalyst from the fuel cell electrode of claim 1 comprising burning or hydrolyzing the support structure.

8. (Withdrawn) An electrolyte membrane for a fuel cell, the electrolyte membrane comprising:
- a support structure comprising bacterial cellulose; and
 - a metal salt disposed in or on the support structure.
9. (Withdrawn) The electrolyte membrane of claim 8 wherein:
- the metal salt is selected from alkali metal salts.
10. (Withdrawn) The electrolyte membrane of claim 8 further comprising:
- a sulfonated polymer disposed in or on the support structure.
11. (Withdrawn) The electrolyte membrane of claim 10 wherein:
- the sulfonated polymer is carrageenan.
12. (Original) A fuel cell comprising:
- an electrolyte membrane comprising a membrane support structure comprising bacterial cellulose;
 - an anode disposed on one side of the electrolyte membrane; and
 - a cathode disposed on an opposite side of the electrolyte membrane,
- wherein at least one of the anode and the cathode comprises an electrode support structure comprising bacterial cellulose, and a catalyst disposed in or on the electrode support structure.

13. (Original) The fuel cell of claim 12 wherein:
the catalyst is selected from platinum group metals.
14. (Original) The fuel cell of claim 12 wherein:
the catalyst is palladium.
15. (Original) The fuel cell of claim 12 wherein:
a metal salt disposed in or on the membrane support structure.
16. (Currently Amended) The fuel cell of claim 12 wherein:
a sulfonated polymer is disposed in or on the membrane support structure.
17. (Withdrawn) A method for impregnating bacterial cellulose with a metal,
the method comprising:
preparing a matrix comprising bacterial cellulose; and
placing the matrix in a solution of a metal salt for a sufficient time period such
that the metal salt is reduced to metallic form and the metal precipitates in or on the
matrix.
18. (Withdrawn) The method of claim 17 wherein:
the metal salt is selected from coordination compounds including a platinum
metal group complex ion, and mixtures thereof.

19. (Withdrawn) A method for forming a fuel cell, the method comprising:
preparing an electrode support structure comprising hydrated bacterial cellulose;
placing the electrode support structure in a solution of a metal salt for a sufficient time period such that the metal salt is reduced to metallic form and the metal precipitates in or on the electrode support structure;
dehydrating the electrode support structure to form an electrode material;
dividing the electrode material into an anode and a cathode;
preparing a membrane support structure comprising hydrated bacterial cellulose;
placing the anode on one side of the membrane support structure;
placing the cathode on an opposite side of the membrane support structure; and
dehydrating the membrane support structure thereby affixing the anode and the cathode to the membrane support structure.

20. (Withdrawn) The method of claim 19 wherein:
the metal salt is selected from coordination compounds including a platinum metal group complex ion, and mixtures thereof.

21. (New) The fuel cell of claim 12 wherein:
the electrode support structure is dehydrated.

22. (New) The fuel cell of claim 12 wherein:
the membrane support structure is dehydrated.

23. (New) The fuel cell of claim 12 wherein:

the anode and the cathode comprise an electrode support structure comprising bacterial cellulose, and a catalyst disposed in or on the electrode support structure.